REMARKS

Claims 1, 5 to 8, 10, 12, 13, 15, and 17 to 23 are pending in this application.[1] Of these, claims 1, 8 and 10 are independent. Favorable reconsideration and further examination are respectfully requested.

Initially, we thank the Examiner for the indication that claims 1, 5 to 7, 17, and 20 to 22 are allowable.

Independent claims 10 was rejected over U.S. Patent No. 7,043,109 (Kish) in view of U.S. Publication No. 2002/0070359 (Kai); and independent claim 8 was rejected over Kish and Kai in view of U.S. Patent No. 6,621,284 (D'Angelo). As shown above, the independent claims have been amended.

Independent claim 8 is presented below.

> 8. A semiconductor chip comprising:
> a semiconductor substrate comprising silicon;
> a light-sensitive integrated circuit that stores correction data for use in correcting a wavelength-dependent output signal of the light-sensitive integrated circuit, the wavelength-dependent output signal being an electrical signal; and
> a temperature sensor for measuring a temperature of an external light source that illuminates the light-sensitive integrated circuit, the light-sensitive integrated circuit for producing the wavelength-dependent output signal in response to light from the external light source;
> wherein the correction data is derived using the temperature of the external light source, the light-sensitive integrated circuit comprising a storage medium for storing the correction data, the storage medium comprising at least one of a Zener diode, a fuse, or an electrically erasable programmable read-only memory; and
> wherein the light-sensitive integrated circuit and the temperature sensor are both on the semiconductor substrate.

[1] The Examiner is urged to independently confirm this recitation of the pending claims.

The applied art is not understood to disclose or to suggest at least the underlined portions of claim 8 above. In this regard, while it is true that Kish discloses a substrate, the substrate disclosed in Kish does not comprise silicon, but rather InP (indium phosphate) (see below).

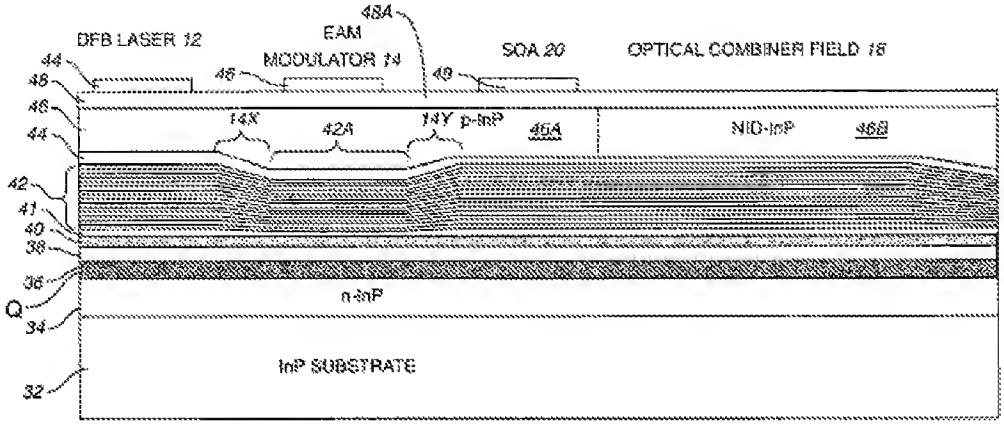


FIG._6

[2]

Furthermore, in the following excerpt, the Office Action admits that Kish does not disclose the claimed temperature sensor; however, the Office Action relies on Kai for its alleged disclosure of a temperature sensor.

[2] Fig. 6 was used to reject former dependent claim 14, which recited a semiconductor substrate. See page 8 of the Office Action.

> Kish et al. lacks specifically a temperature sensor for measuring temperature of light source and correction data derived from the temperature so that the output signal correcting information is based on the temperature of the external light source, so that it is on the integrated circuit.
>
> Kai et al. discloses a temperature sensor that determines a temperature of the light sources, and uses the output of the temperature sensor to control the oscillation wavelengths by compensation for temperature conditions (abstract), temperature sensor (figure 3 element 24) is in the vicinity of the LD array chip-20 (chips are known to be located on integrated circuits/wafers- there would be a type of board/motherboard/integrated circuit supporting and providing proper connections- power and ground- to the chip and thermistor, possibly being shown in the figure by the unlabeled box surrounding elements 20 and 24). [3]

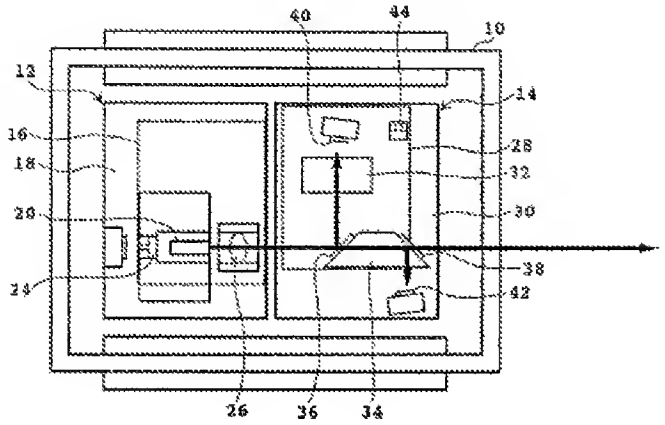
However, the alleged counterpart to the claimed temperature sensor (element 24) is not on the semiconductor substrate, along with the light-sensitive integrated circuit. Rather, element 24 (a thermistor) is on a laser diode base 18, which itself is on a Peltier element 16, as explained in the following excerpts from Kai, and as shown in Fig. 3 of Kai (below).

> [0030] The light source unit 12 includes a Peltier element 16 provided so as to allow heat exchange to the housing 10, an LD base 18 fixed to the Peltier element 16, an LD array chip 20 provided on the base 18, and a thermistor 24 as a temperature sensor provided in the vicinity of the LD array chip 20. As the LD array chip 20, the tunable laser shown in FIG. 1 may be used, for example. Light output from the LD array chip 20 is passed through a lens 26 and then output from this light source unit 12. (emphasis added)
>
> [0071] In the light source module shown in FIG. 3, the thermistor 24 is used to detect the temperature of the LD array chip 20, and the thermistor 44 is used to detect the temperature of the etalon filter 32. Since the thermistor 24 is mounted on the LD base 18, the temperature of the thermistor 24 changes with changes in output wavelength channel. Accordingly, the temperature of the thermistor 24 may remain near 50.degree. C. at the maximum, so that the deterioration of the thermistor 24 is large. On the other hand, the thermistor 44 is used to control the temperature of the etalon filter 32 to a constant temperature within the range of 25 to 30.degree. C., so that a

[3] Office Action, page 3

temperature change of the thermistor 44 is relatively small and its deterioration is therefore small. (emphasis added)

FIG. 3



D'Angelo, which was cited against claim 8 for its alleged disclosure of an EPROM, is not understood to remedy the foregoing deficiencies of Kish and Kai vis-à-vis claim 8.

Furthermore, Kish, which was cited for its alleged disclosure of correction data, describes correcting an optical signal (the wavelength of the laser), not an electrical signal like the claimed wavelength-dependent output signal. This is described clearly in the following excerpt from Kish.

FIG. 17 discloses, in flowchart form, a procedure for adjustment of the wavelength of the channel lasers, set to a predetermined grid wavelength, after which the on-chip SOAs may be adjusted to provide final appropriate output power. As seen in FIG. 17, first, a channel is selected at 130 in the TxPIC for testing. Next, the selected DFB laser is turned on and the output is checked via a photodiode, such as PDs 105 in FIG. 13, to generate data and provide calibrated data (134) as to whether the laser wavelength is off from its desired grid wavelength and by how much. This calibrated data is used to adjust the laser wavelength (136) by current or heater tuning. If the desired wavelength is not achieved (138), the calibration process is repeated. The change in wavelength may also change the optical power available since the power via applied current to the laser affects the amount of power. If optimized wavelength and optical power adjustment is achieved (138), then SOA, such as SOAs 104, is adjusted (140) to provide to desired output power

> for the laser. If all of the laser channels on the TxPIC chip have not been tested (142), the next laser channel is selected (146) and the process is repeated at 132. When the laser channel has been tested, the calibration data for all laser channels for the test TxPIC chip is stored at 144 for future use, such as for recalibration when the transmitter module in which the TxPIC chip is deployed is installed in the field. The stored data functions as benchmark from which further laser wavelength tuning and stabilization is achieved. [4] (emphasis added)

Kai and D'Angelo are not understood to remedy the foregoing deficiencies of Kish in this regard.

For at least the foregoing reasons, claim 8 is believed to be patentable over the applied art. Claim 10, which includes features similar to those of claim 8, is likewise believed to be patentable over the applied art.

Dependent claims are also believed to define patentable features. Each dependent claim partakes of the novelty of its corresponding independent claim and, as such, each has not been discussed specifically herein.

It is believed that all of the pending claims have been addressed. However, the absence of a reply to a specific rejection, issue or comment does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment.

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[4] Kish, col. 21, line 57 to col. 22, line 17

In view of the foregoing amendments and remarks, we respectfully submit that the application is in condition for allowance, and such action is respectfully requested at the Examiner's earliest convenience.

The undersigned attorney can be reached at the address shown below. All telephone calls should be directed to the undersigned at 617-521-7896.

Please apply any deficiency in fees or credit any overpayment to Deposit Account 06-1050 referencing Attorney Docket No. 14603-012US1.

Respectfully submitted,

Date: October 30, 2009

/Paul Pysher/

Paul A. Pysher
Reg. No. 40,780

Fish & Richardson P.C.
225 Franklin Street
Boston, MA 02110-2804
Telephone: (617) 542-5070
Facsimile: (617) 542-8906

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